



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply To
Attn Of: ECL-116

MEMORANDUM

SUBJECT: Action Memorandum for a Removal Action and Request for the \$2 Million
Exemption Ceiling at the Hamilton-LaBree Groundwater Contamination Site, near
Chehalis, Lewis County, Washington
Site ID: 108R

FROM: William Longston
On-Scene Coordinator

THRU: Chris D. Field, Unit Manager
Emergency Response Unit
Environmental Cleanup Office

TO: Michael G. Gearheard, Director
Environmental Cleanup Office

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval for a time critical removal action at the Hamilton-LaBree Groundwater Contamination (hereafter H-L) Superfund Site located near Chehalis, Lewis County, Washington. In addition this document is a request for approval of a \$2 Million exemption.

II. SITE CONDITIONS AND BACKGROUND

The CERCLIS ID number for this site is WAH 000 002 857. This is a time critical removal.

In June, 2000, the United States Environmental Protection Agency (EPA) On-Scene Coordinator (OSC) was contacted by Panjini Balaraju, Project Manager, of the Washington State Department of Ecology, Toxic Cleanup Program, Southwest Regional Office (Ecology). At the request of the state, EPA Emergency Response assumed responsibility for the portion of the site associated with an area of extremely high concentration of Perchloroethylene (PCE) located adjacent

to Interstate Highway 5, adjacent to Hamilton Road North near Chehalis, Lewis County, Washington. The OSC inspected the site in conjunction with various Department of Ecology personnel and initiated activities to determine the extent and source of this contamination. The OSC entered the site under voluntary access to both commercial and residential properties and collected soil and water samples to analyses. At this time the extent of contamination is only approximately known and although the location of the highest concentration is well documented, no known source for this material is known. (See Figure C, PCE Isopleth Map)

A. SITE DESCRIPTION

1. REMOVAL SITE EVALUATION:

In 1994, the Washington State Department of Health (DOH) sampled six shallow drinking water wells in the vicinity of the H-L site as part of a routine sampling program. PCE was detected in each of the six at concentrations ranging from 3 micrograms per liter (ug/L) to 2,165 ug/L. The Safe Drinking Water Act Maximum Contaminant Level (SDWA MCL) for PCE in drinking water is 5 ug/L (40 CFR 141.61). Lewis County Public Services informed affected well owners of the sampling results and advised them to obtain alternate sources of drinking water. Washington Department of Ecology (DOE) at a later date began supplying bottled water for some of the families and businesses in the affected area.

Previous investigations and on-going groundwater monitoring of local drinking water and monitoring wells by Ecology, DOH and now EPA have confirmed elevated PCE concentrations down to a depth of approximately 40 to 60 feet below ground surface (bgs) in the shallow aquifer. The groundwater sampling data from several wells completed in the deeper aquifer (approximately 150 to 200 feet bgs) indicate that the deep aquifer has not been impacted by PCE. In May 1996, confidential sources suggested that drums of solvent may have been buried or dumped on the S.C. Breen property located northeast of the Hamilton/LaBree Roads intersection. As a result of this information, Ecology contracted Geo-Recon International in October 1996 to conduct a geophysical investigation on a portion of the Property. Electromagnetic and ground penetrating radar (GPR) techniques were employed to locate the alleged buried drums. The investigation did not show clear evidence of buried intact drums, however; the results of the electromagnetic survey did show some anomalies. In September 1999, an excavation began at on the anomalous areas within the Bulldog Trailer Manufacturing building located on the S.C. Breen property. Three layers of 55-gallon drums were discovered at a depth of 10 feet bgs. Sixty-four 55-gallon drums were excavated from this location. Many of the 64 drums excavated were in poor physical conditions. Some of the drums whose integrity was not compromised contained a black sludge. This black sludge was sampled by Ecology and submitted for analysis. Analytical results of the black sludge showed that trichloroethylene (TCE) was present in the sludge.

SAIC was contracted by Ecology in late 1996 to locate the source(s) of contamination. Eight monitoring wells were installed during Phase I and II of the investigation. PCE was detected in six of the eight wells at concentrations ranging from 3 ug/L to 1,500 ug/L. As a result of the investigation, SAIC could not identify a single source area; however, the groundwater data did indicate that there could be multiple source areas.

Transglobal Environmental Geosciences (TEG) was contracted by Ecology in March 1998 to conduct a site investigation to assist in identifying the probable source area(s) of the groundwater contamination. Shallow and deep groundwater samples were collected from temporary borings and analyzed in an on-site mobile laboratory. Significant concentrations of PCE were found in an area northeast of the intersection of Hamilton Road North and LaBree Road (S.C. Breen property) at levels of 16 ug/L. The highest PCE concentrations were detected from shallow borings east of the United Rental facility, located between Hamilton Road and Berwick Creek. The maximum PCE concentration found in groundwater during TEG's investigation was found in a sample collected approximately 200 feet east of the industrial painting facility building. The concentration of PCE detected in this groundwater sample was 60,000 ug/L. PCE also was detected on the property of the painting facility ranging in concentration from 6 ug/L to 20,000 ug/L. PCE was not detected in groundwater in the wells located on the east side of I-5.

In June, 2000 EPA assumed responsibility for the site and began a Removal Assessment which included sixteen Geoprobe/auger boreholes, fourteen groundwater and 45 subsurface soil samples. PCE was detected above the MCL in 11 of the groundwater samples at concentrations ranging from 28 to 190,000 ug/L. The highest PCE concentration in a soil sample was 13 mg/kg.

In August, 2000, EPA conducted a Phase II removal assessment, in which six additional monitoring wells were installed along Hamilton Road. PCE was detected above the MCL in five of the six wells with concentrations ranging from 110 to 44,000 ug/L. Groundwater samples were also collected from the 15 existing monitoring well and three private wells. The analytical results for PCE are similar to those obtained in previous investigations. PCE was detected above the MCL in samples obtained from 13 of the 15 existing monitoring wells and two of the three private wells sampled.

EPA conducted a Phase III removal assessment between January and May 2001. Monitoring wells were installed along the east side of I-5 and in addition to well water samples eighteen soil samples were collected. The analytical results indicated that PCE was not present above the quantitative limit in either the soil or groundwater samples collected at these locations.

The result of these removal assessment phases is that there are two "hot zones" identified. The first is located east of the United Rentals facility, between Hamilton Road and I-5. The highest PCE concentration detected during the removal assessment was 190,000 ug/L. The area within the 20,000 ug/L concentration contour in this "hot zone" is estimated to be one acre. The width of the plume measured in the north-south direction is estimated to be at least 700 to 1,000 feet. Although a dense non-aqueous phase liquid (DNAPL) was not observed during these investigation phases, the level of PCE contamination in groundwater suggest that a DNAPL might be present near this zone.

The second "hot zone" is located at the intersection of Hamilton Road and LaBree Roads, down gradient of the first "hot zone". The highest PCE concentration detected during this assessment was 2,700 ug/L. The width of the plume at the 500 ug/L concentration contours is estimated to be 1,300, as measured in a north-south direction. The western extent of the plume is not defined as too few samples were collected to make that determination.

2. PHYSICAL LOCATION:

The Hamilton-LaBree Contamination site which is the subject of this removal action is located approximately three miles southwest of Chehalis, Washington. The H-L site lies within the Newaukum River Valley and is bordered by Interstate 5 to the west and a mixture of residences and light industrial and agricultural operations to the north, south, and west. It was assumed that the regional groundwater flows toward the Newaukum River, which is located approximately one-half mile from the H-L site.

3. SITE CHARACTERISTICS:

The site location includes light industrial, commercial and medium to large lot residential including a commercial dairy. The site is outside city limits in a largely rural setting but adjacent to Interstate 5 with one overpass over the highway as part of the site. The areas of concern are intersected by Berwick Creek and are near the Newaukum River, which is a tributary to the Chehalis River.

Properties within the affected area are owned variously by private citizens, Lewis County, the City of Chehalis, and commercial enterprises. Several easements for utilities intersect the affected area including overhead power lines, water and sewer lines, natural gas lines and telephone and cable lines.

This is the second removal for this site. The first removal action provided (and continues to provide) bottled drinking water to affected residences. This removal action will continue in place until the remedy provided by this action is completed and functional.

The known contaminated drinking water wells are located in a shallow aquifer whose total depth ranges from approximately 40 to 60 feet bgs. The project area, as determined by drilling logs, is underlain by about 30 to 35 feet of poorly sorted gravel, with varying amounts of fine-to-medium sand in a matrix of silt, a trace of clay, and occasional cobbles. Interbedded within the gravel unit are several discontinuous silt lenses ranging in thickness from one to seven feet. Between 30 and 45 feet bgs poorly sorted, fine-to-medium sands with silt, little to some, fine-to-medium gravels and traces cobbles are found. At the base of this same unit, a bluish-gray clayey silt aquitard is found below 45 feet bgs. This clay layer at the base of the sand unit is approximately 100 feet thick and acts as a competent confining unit separating the shallow and deeper groundwater units. Depth to groundwater in the shallow aquifer is generally between approximately one to 10 feet bgs. Elevations of the upper surface of the aquitard layer suggest that the unit is dipping in a west-northwest direction with about three feet of relief across the site. The groundwater flow in the shallow aquifer is predominantly west-northwest, generally flowing toward the Newaukum River.

4. RELEASE OR THREATENED RELEASE INTO THE ENVIRONMENT OF A HAZARDOUS SUBSTANCE, OR POLLUTANT OR CONTAMINANT

Various removal assessments have demonstrated significant levels of perchloroethene in the shallow water aquifer in the subject area. Perchloroethene levels as demonstrated in Table 1 attached indicated a sustained history of contamination in the drinking water wells of several residences at levels many times the MCL of 5 ug/L. Perchloroethene, also known as PCE is a colorless liquid with a mild, chloroform-like odor. It is heavier than water (specific gravity equals 1.62) and has a solubility of 0.02% in water (NIOSH 1997). PCE is commonly used as a solvent in metal degreasing and cleaning operations, dry cleaning and for other industrial uses. PCE is a carcinogen and presents a risk through

ingestion through drinking water and inhalation. PCE is in continuum between a class B2 and class C carcinogen Agency for Toxic Substances and Disease Registry (ASTDR) Toxicological Profiles for TCE TP-92/18).

5. NPL STATUS :

This site was listed on the Environmental Protection Agency's Superfund National Priorities List of hazardous waste Sites in July of 2000.

6. LOCATION MAPS:

Figure A is a general area location map indicating the site in relation to Interstate 5 and the city of Chehalis, Washington.

Figure B is a schematic drawing indicating the general location of the proposed waterline route along Maurin Road, Hamilton Road, North Hamilton Road, LaBree Road and Rice Road.

Figure C provides a PCE isopleth map for the shallow aquifer with an insert indicating the "hot spot" located along Hamilton Road North.

B. OTHER ACTIONS TO DATE

1. PREVIOUS AND CURRENT ACTIONS:

In September 1999, an excavation was conducted by S.C. Breen Construction company at one of the anomaly areas previously discovered inside the Bulldog Trailer Manufacturing building, which is approximately 100 feet long and 50 feet wide. The subsurface in this area was excavated to a depth of 10 feet below ground surface (bgs). Three layers of 55-gallon drums were discovered; approximately 63 drums were removed. All the drums contained a black viscous product (sludge) and water. Most of the drums were leaking at the time of removal, and the leaking product was sampled. The results indicated the presence of several VOCs including PCE and several degradation products including cis-1,1,1-trichloromethane, trichloroethene (TCE), and vinyl chloride.

Other actions include the provision of bottled and/or water treatment to ten residences and businesses affected by this contamination. Providing bottled water was initiated by the Washington Department of Ecology in 1998. Responsibility for providing pure water was assumed by EPA in June, 2000, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authority and continues.

Removal assessments in four phases has provided sufficient information to document the threat to human health and to provide the necessary physical information to provide a remedy.

EPA in conjunction with the Washington Department of Health has issued several fact sheets, has held meetings with all affected individuals and has held one public meeting to discuss the health

aspects of this contamination and to explain the proposed remedial and removal actions for this site. The proposed removal actions, while not addressing the cause of the contamination, is designed to eliminate the exposure of the affected population. In addition to providing a new clean source of potable water to this affected population, the new water line has sufficient capacity to provide coverage for an additional 15 to 20 residential hookups if the contamination plume should migrate that far.

C. STATE AND LOCAL AUTHORITIES' ROLES

1. STATE AND LOCAL ACTIONS TO DATE:

The Washington Department of Ecology (DOE) provided all initial investigations of this site, determined anomalies within the ground, installed and sampled monitoring and private water wells to determine the extent of the contaminated plume, monitored (under order) the removal of drums from the Bulldog Trailer Manufacturing building and provided bottled water to the affected residences (including a filtering system on one property).

2. POTENTIAL FOR CONTINUED STATE/LOCAL RESPONSE:

The DOE requested that EPA take the lead on this site due to limited financial ability to handle such a potentially large and expensive project. EPA has also assumed financial responsibility for bottled water and the filter system on one residence.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, STATUTORY AND REGULATORY AUTHORITIES

A. THREATS TO PUBLIC HEALTH OR WELFARE

1. Actual or potential exposure to nearby human population, animals or the food chain from hazardous substances or pollutants or contaminants. PCE and possibly other VOC contamination exists in ground water, surface water and soils on site. The maximum contaminant level (MCL) for PCE is 0.005 mg/l (EPA 1989c (40 CFR 141,142,143) ATSDR TP-92/18). TCE values in residential drinking water wells range from non-detect-to 2830 mg/l.
2. Actual or potential contamination of drinking water supplies or sensitive ecosystems. Shallow aquifer wells within the affected area are contaminated with PCE at a level above the MCL. Quarterly sampling of residential and monitoring wells for a period in excess of four years indicates continuing presence of PCE and also indicates the movement of the contaminate plume in a northwesterly direction. Conservative calculations indicate that the plume will continue to move and affect an additional five to eight residences in the next five year period.

B. THREATS TO THE ENVIRONMENT

1. Weather conditions that may cause hazardous substance or pollutants or contaminants to migrate or be released. Spring floods are a common occurrence in the flood plain of the Chehalis River. Although contamination is almost all within the water table, which is only 2-3 feet below ground surface, during times of flooding, contaminated water can rise to the surface which would greatly increase exposure to both humans and the environment.

-

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in the Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

The approval of the \$2 Million exemption requires that three components of the emergency exemption are addressed.

1. There is an immediate risk to public health or welfare or the environment. Most residences of the immediate area of contamination are serviced by shallow drinking water wells which are contaminated with high level of PCE. Only by continuously providing bottled water for drinking and cooking can human health be protected. Other water usage such as bathing still uses PCE contaminated water.

2. Continued response actions are immediately required to prevent, limit, or mitigate an emergency. Continuation of the current situation allows continued exposure to PCE vapors. The construction of an extension to the City of Chehalis water system will eliminate all threat to human health caused by the current use of shallow drinking water wells.

3. Assistance will not otherwise be provided on a timely basis. Neither state nor county government has access to or resource to provide an alternate drinking water supply. We have been requested to provide this action by the Washington Department of Ecology.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

1. PROPOSED ACTION DESCRIPTION:

The proposed action for the elimination of the threat to human health is proposed to be accomplished by the extension of the Chehalis Public Water District system to all the affected residences and businesses in the path of the contamination plume. The line would extend from a connection to the existing system on Maurin Road, extend westward under Interstate 5, branch into two areas along North Hamilton Road and a second branch along Hamilton Road-LaBree Road and Rice Road. See Figure B. The water main installation would include one interstate highway crossing, five county road crossings and two creek crossings all of which would be installed within a protective casing advanced by horizontal and directional jack and auger boring methods. The line would variously

be 12, 10, and 8 inches in diameter and would provide drinking water and fire protection to 20 residences and businesses. This line is designed for an additional capacity of 21 connections to accommodate future advancement of the groundwater plume. The line would be approximately 12,000 feet long. Each resident and business would receive city water into their system and all connections into the residence of shallow drinking water wells will be terminated to prevent cross contamination. After the completion of the system and it's prove-in, the system would become the property and responsibility of the City of Chehalis. The proposed line resides both in and outside of the City of Chehalis Urban Growth Plan Area and portions are under the control of the City of Chehalis and other portions under the control of Lewis County.

All contaminated material generated as a result of this construction project will be disposed of in accordance with off-site policies as required for contaminated material. The project will be constructed during July through September of 2002. This period corresponds with the period of lowest groundwater and therefore the minimum generation of potentially contaminated groundwater removed during the construction process. The construction of this project will be either under or along major traffic routes and will require traffic diversion and daily coverings of open areas. All activities will be coordinated with local police and sheriff's offices.

2. CONTRIBUTION TO REMEDIAL PERFORMANCE:

Although the construction of this pipeline system does not contribute directly to the site remediation, it does provide a permanent solution to the problem of contaminated drinking water to the local population and is therefore protective of public health and the environment. The solution is not inconsistent with any long-term remedy.

3. DESCRIPTION OF ALTERNATIVE TECHNOLOGIES:

In order to remove the PCE contamination from drinking water for current and future residents the following options were evaluated:

- A. No Action
- B. Continued bottled water
- C. Pump and Treat
- D. In-Situ Air Sparging - Density Driven Convection
- E. Permeable Reactive Barrier
- F. Hydrogen Release Compound Bio Remediation
- G. Provide potable water through attachment to existing Chehalis Public Water System

Specific discussions of these options are as follows:

- A. No Action - This action does not address the current and ongoing threat to public health to affected residents of this area. This option is not an acceptable solution.

B. Continued bottled water - While this is a temporary solution to the contamination threats to human health and could be expanded to include future plume movement, it presents no solution to the problem. One of the sources of contamination is most likely a Dense Non-Aqueous Phase Liquid and will present a continuing source of contamination for the indefinite future. Most likely this time frame could be measured in decades if not centuries. In addition, continued use of private contaminated wells for other purposes than drinking and cooking water do present a threat to health by exposure to vaporizing TCE while in other usages such as bathing, showering, and clothes washing. This option is not an acceptable long term solution.

C. Pump and Treat - Pump and Treat (P & T) was considered because it is considered as a presumptive remedy for Remediation of contaminated groundwater. P&T consists of pumping contaminated groundwater from the subsurface and treating the groundwater above ground by granulated activated carbon, air stripping, or other wastewater treatment technologies. The advantages of P & T for this site include the initial removal of a certain amount of PCE relatively quickly and would be compatible with additional bio remediation. The disadvantages P & T are the long length of treatment necessary to achieve the clean-up goal, absorbed PCE on soil matrix cannot be removed by this technique, and the costs of permitting, procuring, and operating this treatment system are high.

The capital cost of P&T for this site could range from \$600,000 to 1.5 Million dollars. The annual operational cost could range from \$120,000 to \$400,000. P&T would not be recommended as a stand-alone technology due to its low efficiency especially at lower concentrations of contamination. This option is not an acceptable long term solution since it would not be an effective technique to clean the existing plume and could only marginally treat the source of contamination.

D. In-Situ Air Sparging- Density driven convection (DDC) in-situ air sparging is an innovative technology recently demonstrated. Unlike the conventional system that injects pressurized air through the aquifer, DDC involves construction of a special well consisting of two sections of screens and a grout seal between the screens. Air is injected at the bottom of the well at relatively low pressure via a drop tube installed inside the well casing. The grout seal prevents the air from escaping immediately into the formation. The air forms bubbles which flow upwards within the well casing, displacing water and reducing the density of the water column within the well. The effect of the density reduction is to create an upward vertical gradient within the well, drawing groundwater in through the lower screen and pushing aerated groundwater out through the upper screen. This process creates a groundwater circulation cell within the aquifer surrounding the DDC well. As contaminated groundwater circulated through the well screen, VOCs are stripped and VOC laden air is withdrawn from the top of the well and treated by an activated carbon filter system and re-circulated back into the blower intake.

Advantages of DDC air sparging are that air sparging removes VOCs based on their physical properties. No chemicals are required to be injected into the subsurface; VOCs are removed as the final products; no degradation by-products will be generated and the initial removal of a certain mass of PCE is relatively fast.

Disadvantages are 1) the heterogeneity of site geological formation (currently unknown) can impact air channel distribution, thus potentially enlarging the contaminant plume, 2) accumulation of toxic VOCs in the vadose zone increases the chance of VOC migration into the air if the extraction system is

not properly designed or operated, 3) extensive mechanical components, including air compressors, blowers, controllers, and offgas treatment systems are required including large space, extensive piping and high labor and energy costs and 4) the system is not compatible with Bio remediation of PCE since the degradation rate of PCE under aerobic conditions is extremely low (order of magnitude of half life of 1,000 days). For this location, the capital cost is estimated to be \$1.5 million to remove PCE from the contaminated groundwater within an area bounded by the 1,000 ppb contour (See Figure C). This would require 70 to 90 wells, 16 control systems, and 16 activated carbon units. Annual operational cost is estimated at \$200,000 to \$700,000 with a time requirement of two to four years. This technology is not acceptable due to extremely high costs and it would not treat the existing plume and thereby not eliminate the current exposure to site residents.

E. Permeable Reactive Barrier - The Permeable Reactive Barrier (PRB) technology consists of zero valent iron as a median of a barrier and is installed in the path of the contaminants plume. As a plume passes through the reactive zone of PRB, the contaminants are chemically transformed into less toxic products. The degradation process of TCE is an abiotic reductive dechlorination, in which PCE is reduced to cis-dichloroethene (DCE), vinyl chloride (VC), and eventually to ethene and iron is oxidized to iron cations and precipitated as iron oxides. The advantages are 1) no mechanical components or above-ground treatment, 2) relatively quick reaction time, 3) compatible with bio remediation.

Limitations are PRB may loose reactive capacity due to precipitation of metal salts which occlude the iron surface and affect its reduction-oxidation properties, 2) the size of the plume must be accurately defined involving extensive geological and hydro-geological studies and costly modeling, 3) Spacial constraints - a wall 700 feet long and 1.7 feet wide would be a minimum size in an area constrained by Interstate 5 and Hamilton roads. Cost would be approximately \$3.33 Million . This technology is not acceptable due to extremely high costs and it would not treat the existing plume and thereby no eliminate the current exposure to site residents.

F. Hydrogen Release Compound Bio Remediation -HRC technology is a proprietary, good grade, polylactate ester that, upon being deposited into the subsurface, slowly degrades to lactic acid. Lactic acid is then metabolized to hydrogen which in turn drives the reductive dechlorination of PCE to DCE,, VC and eventually to ethene. The liquid product can be introduced into the contaminated aquifer through a Geoprobe, hollow-stem auger, or through existing monitoring wells.

The advantage include 1) minimal site disturbance since no above ground equipment required after initial injection, no intensive geological or hydrogeological studies required, and 3) no major capital and operational costs associated with mechanical systems.

Disadvantages include microorganisms have to be present in the subsurface before HRC can be applied, and 2) reapplication may be required if the total PCE loading is high. Costs for this technology requiring approximately 700 injection points would be \$1.2 to 1.5 Million dollars per application. This technology is not acceptable due to extremely high costs and it would not treat the existing plume and thereby not eliminate the current exposure to site residents.

G. Provide Potable Water to all affected residents by connection to existing Chehalis Public Water District - This can be accomplished by extending an existing line from the Maurin Road end of

line location. The line would be extended westward along Maurin Road, under Interstate 5, branching into North Hamilton Road and another branch along Hamilton Road-LaBree Road, and Rice Road. See Figure B. The water main installation would include one interstate highway crossing, five county road crossings and two creek crossings all of which would be installed within a protective casing advanced by horizontal and directional jack and auger boring methods. The line would variously be 12, 10, and 8 inches in diameter and would provide drinking water and fire protection to 20 residences and businesses. The line is designed for an additional capacity of 21 homes to accommodate future advancement of the groundwater plume. The line would be approximately 12,000 feet long. Each resident and business would receive city water into their system and all connections into the residence of shallow drinking water wells will be terminated to prevent cross contamination. After the completion of the system and it's prove-in, the system would become the property and responsibility of the City of Chehalis.

While alternatives A-F each provide some degree of removal of the contamination source, none provide an immediate elimination of the threat to human health since none can address the contaminated plume. Only option "G" represents a direct and complete protection of human health. This alternative is thus chosen.

4. EE/CA

The Engineering Evaluation/Cost Analysis (EE/CA) requirement applies only to non-time critical responses. This is a time critical response.

5. APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

FEDERAL ARAR(S):

Wastes on site include: TCE, PCE and possibly 1,2 cis Dichloroethane. The Federal ARARs's determined to be practicable for the site include RCRA 261.24 Subpart C, toxicity characteristic waste (D039 for PCE), (D040 for TCE), 261.3 (Subpart D (Lists of Hazardous Wastes)(Spent halogenated solvent (F002 for PCE and TCE), RCRA 262 (Standards applicable to generators of hazardous waster), RCRA 268 (Land disposal restrictions apply), CERCLA Section 101(14) and (33) and to the extent practicable, Ambient water quality criteria (AWQC), and Safe Drinking Water Act (SDWA) 40 CFR 141.52.

The EPA maximum contaminant levels (MCL) for VOC's observed on site for TCE is 5ug/L, for PCE is 5ug/L for 1,2 cis DCE is 5ug/L and for vinyl chloride is 2 ug/L) based on the Safe Drinking Water Act (SWDA) 40 CFR 141.52.

Land disposal treatment standards for D040 (TCE), D039 (PCE), and F002 (spent solvents) for non-waste waters is 6.0 mg/kg and must meet 268.48 universal treatment standards.

Land disposal treatment standards for D040 (TCE), and F002 (TCE) for waste waters is 0.054 mg/L and must meet 268.48 universal treatment standards.

Land disposal treatment standards for D0039 (PCE) and F002 (PCE) for waste waters is 0.056 mg/L and must meet 268.48 universal treatment standards.

The Federal Clean Air Act (CAA) of 1990 is not applicable due to the small size of the volumes of VOC's.

WASHINGTON STATE ARAR(S):

The State of Washington drinking water standard for VOC's is the federal standard of MCL's based on the Safe Drinking Water Act (SDWA) 40 CFR 141.52 (See Federal ARAR's) DOH requires NSF 61 standards.

The State of Washington, under WAC 173-340 Implementing regulations of the Model Toxics Control Act (WMTCA), Method A for VOC observed on site in ground water for TCE is 0.5 mg/kg and for PCE is 0.5 mg/kg. The WMTCA method B cleanup standards for volatiles for soils to protect ground water (100 times the groundwater concentration) for TCE is 0.098 mg/kg and for PCE is 0.0858 mg/kg.

The Washington Clean Air Act, Chapter 70.94 of the Revised Code of Washington (RCW) is not applicable due to the small source volumes of VOC's releases to the air.

Washington State Department of Transportation (WSDOT) Utility Permit - In order for the proposed water main to cross Interstate 5, a 24 inch diameter steel casing will be installed beneath I-5. The casing will be installed using the horizontal bore installation method. Since the point at which the water line will connect to the city water supply and the point at which the water line will cross under I-5 are outside the Site boundaries, EPA must apply for and WSDOT must issue a Utility Permit prior to the casing being installed. WSDOT will observe the installation of the casing and inspect/approve the installation once it is complete.

LOCAL ARARS(S):

Washington State Department of Transportation (WSDOT) Utility Permit - In order for the proposed water main to cross Interstate 5 (I-5) a 24 inch diameter steel casing will be installed beneath I-5. The casing will be installed using the horizontal bore installation method. EPA must apply for and WSDOT must issue a Utility Permit prior to the casing being installed. WSDOT will observe the installation of the casing and inspect/approve the installation once it is complete.

Lewis County Franchise Agreement - The water main will be installed within Lewis County Right-of-Way (ROW). Lew County requires a Franchise Permit for all work to be completed within Lew County ROW. Since the water main will become the property of City of Chehalis, the City and Lewis County agreed that the City will apply for the Franchise Permit even though it is outside the city's Urban Growth Area (UGA). EPA will provide all information required for the permit.

6. PROJECT SCHEDULE:

The construction of the pipeline is estimated to take approximately three months (August through October) of 2002. Actual construction should require approximately 60 days with an additional 30 days for follow up and certification . Following certification of the system, the long term operation and maintenance of the water system will be assumed by and become the responsibility of the City of Chehalis.

B. ESTIMATED COSTS

Regional Allowance costs:

ERRS Contractor	\$1,996,000
START	<u>367,000</u>
Subtotal	2,363,000
10% contingency	<u>236,000</u>
Subtotal of Extramural	\$2,599,000

Intramural Costs:

EPA Direct	\$15,000
EPA Indirect	20,000
USCG Strike Team	<u>22,000</u>

TOTAL INTRAMURAL COST	57,000
-----------------------	--------

<u>TOTAL, REMOVAL PROJECT CEILING</u>	<u>\$2,656,000</u>
--	---------------------------

VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action would delay the removal of contaminants from drinking water sources in the area of the contaminate plume and increase public health risks as known sources of contaminants continue to spread through groundwater to additional areas near the site.

VIII. OUTSTANDING POLICY ISSUES

None

IX. ENFORCEMENT

Potential responsible parties have been notified. Remedial program efforts including an Administrative Order on Consent for Remedial Investigation/Feasibility Study are in place and currently being implemented.

X. RECOMMENDATION

This decision document represent the selected removal action for the Hamilton LaBree Drinking Water Site, near Chehalis, Washington, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the administrative record for the site.

Conditions at the site meet the NCP section 300.415(b)(2) criteria for a removal and the CERCLA section 104 (c) emergency exemption from the \$2 million limitation, and I I recommend your approval of the proposed removal action and the \$2 million exemption. The total project ceiling if approved will be the \$2,656,000. Of this, an estimated \$1,996,000 comes from the Regional FY 02 removal allowance .

DISAPPROVAL

(signature)
Michael F. Gearheard

—

(typed/printed name)

APPROVAL

(signature)
Michael F. Gearheard

(typed/printed name)